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Pseudoscorpions of the Family Cheliferidae from New Mexico

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The present paper is the fourth and last of a series concerned with the taxonomy of pseudoscorpions from New Mexico. The investigation was aided by faculty research grants from the University of New Mexico and grants from the American Academy of Arts and Sciences and from the National Science Foundation (Grant NSF-G112). Pseudoscorpions collected from rodent nests in Santa Fe County were made available through the kindness of Mr. Harvey B. Morlan, Sanitarian, United States Public Health Service. Holotypes, allotypes, and some duplicate paratypes, along with representative specimens of other species discussed, are deposited at the American Museum of Natural History. Accompanying drawings were made with the aid of a camera lucida and are designed chiefly to show the shape of palpal podomeres and the position of tactile setae. No attempt was made to show surface sculpturing of podomeres or the marginal teeth on the chelal fingers. Measurements of the chela and chelal hand do not include the pedicel.

FAMILY CHELIFERIDAE HAGEN

This family contains monosphyronid pseudoscorpions characterized as follows: usually three or four setae in the flagellum; setae of cheliceral hand never smoothly clavate; both fixed and movable chelal fingers with a well-developed venom apparatus; no accessory teeth on the chelal fingers; femur of the first leg conspicuously different from the femur of

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the fourth leg. This large family is subdivided into three subfamilies: Paragoniochernetinae Beier from Africa and New Zealand, the cosmopolitan Withiinae Chamberlin represented by a single genus in the United States, and the very common and widely distributed Cheliferinae Simon. Many genera and species of the Cheliferinae occur in the United States, and the subfamily is well represented in the fauna of New Mexico. Species assignable to Withiinae are not known from New Mexico.

SUBFAMILY CHELIFERINAE SIMON

This subfamily contains cheliferid pseudoscorpions characterized by having three, occasionally four, setae in the flagellum; no definite areas or patches of microsetae and/or small lyrifissures on the sternites of the male; femoral articulation of legs 1 and 2 almost always definitely oblique to the long axis of the femur; tarsal claws of the first leg of the male usually asymmetrical; tarsal claws and subterminal tarsal setae often, but not always, toothed or cleft; genitalia of the male with statumen convolutum; ramshorn organs and coxal sacs usually, but not invariably, present; anterior genital operculum of female usually with a marginal row of setae in addition to the scattered setae of the face of the operculum.

Up to now, the subfamily Cheliferinae has been subdivided into two tribes (Cheliferini Chamberlin and Dactylocheliferini Beier) or into three tribes, depending on the acceptance or rejection of the Australian tribe Protocheliferini established by Beier in 1948. Chamberlin (1949) has relegated the tribe Protocheliferini to synonymy by placing the type genus *Protochelifer* in the tribe Dactylocheliferini. This synonymy has no bearing on the present work and is not discussed further.

What is pertinent to the present investigation, however, is the discovery of a form of Cheliferinae not assignable to either the Cheliferini or the Dactylocheliferini, although the form has some characteristics of both tribes. This has led to the creation of a new genus, *Juxtachelifer,* which in turn is designated the type genus of the new tribe Juxtacheliferini. A discussion of the intertribal relationships of Juxtacheliferini will be found under the description of the new tribe.

TRIBE CHELIFERINI CHAMBERLIN

This tribe includes cheliferin pseudoscorpions characterized by the presence in the male of a statumen convolutum in which the anterior margin is always deeply invaginated and usually contains a sclerotic rod-like process; coxal sacs of the male, when present, without a clearly differentiated medial chamber or atrium; median cribriform plates of the female distinctly paired. The tribe is well represented in all parts of the world,

and numerous genera and species occur in the United States. Six genera are reported from New Mexico.

CHELIFER GEOFFROY

Chelifer GEOFFROY, 1762, Histoire . . . des insectes, vol. 2, p. 617 (referred from Beier, 1932).

Pseudoscorpions of this genus can be separated from those of other New Mexico genera by the following combination of characteristics: seta *sb* absent from the cheliceral hand; tarsus of the fourth leg with a subterminal microspinule on each of the subterminal setae and with an accessory tooth on each of the claws; male with coxal sacs; no apical spine on the tarsus of the first leg of the male; female with each median cribriform plate having a diameter less than the diameter of the anterior tracheal trunk. The genus contains a single species, *C. cancroides*.

Chelifer cancroides (Linnaeus)

Acarus cancroides LINNAEUS, 1758, Systema naturae, ed. 10, p. 616.
Chelifer cancroides, FOURCROY, 1785, Entomologia Parisiensis, pt. 2, p. 526 (referred from Hoff, 1949). BEIER, 1932, Das Tierreich, vol. 58, p. 236.

This virtually cosmopolitan species is usually associated with man, being taken frequently from dwelling houses, chicken houses, and barns. In addition, the species is found on occasion in the nests of birds and rodents. While *C. cancroides* has been reported from several adjacent states (Hoff, 1950), the present record is the first for New Mexico. A single individual from Albuquerque assigned by Ewing (1911) to *C. cancroides* var. *muricatus* Say is certainly neither *C. cancroides* nor *C. muricatus*. Its probable species designation is considered below in the discussion of *Parachelifer persimilis*.

RECORD: A single male taken from a chicken house in Albuquerque, Bernalillo County, at an elevation of about 5000 feet.

HAPLOCHELIFER CHAMBERLIN

Haplochelifer CHAMBERLIN, 1932, Canadian Ent., vol. 64, p. 20; 1952, Bull. Amer. Mus. Nat. Hist., vol. 99, p. 305.

The genus can be distinguished from other New Mexico genera of Cheliferini by the absence of coxal sacs in the male and by each median cribriform plate of the female having a diameter as great as or greater than the diameter of an anterior tracheal trunk. An emended diagnosis is given by Chamberlin (1952). The genus includes a single species, *H. philipi*.

Haplochelifer philipi (Chamberlin)

Chelifer philipi CHAMBERLIN, 1923, Proc. California Acad. Sci., ser. 4, vol. 12, p. 374.
Haplochelifer philipi, CHAMBERLIN, 1932, Canadian Ent., vol. 64, p. 20; 1952, Bull. Amer. Mus. Nat. Hist., vol. 99, p. 306.

This is a common species throughout the Rocky Mountain region of the United States. For a species description, see Chamberlin (1952).

RECORDS: *Bernalillo County:* From Gambel-oak litter and from acorn hulls and litter in a hollow, yellow-pine stump, just east of Cole Springs, east side of the Sandia Mountains, elevation about 7400 feet. *Los Alamos County:* From mixed Gambel-oak and yellow-pine litter near Los Alamos, elevation about 7600 feet. *San Miguel County:* From oak litter, 9 miles south of Villaneuva, 6400 feet elevation. *Santa Fe County:* From pinyon litter on an eroded hillside just within the north city limits of Santa Fe, elevation about 7500 feet. *Socorro County:* From litter beneath a live oak in a box canyon on the east side of Ladron Peak, north of Socorro, elevation about 6600 feet. In our area, this species appears to be associated with oak litter within a very narrow altitudinal band.

PARACHELIFER CHAMBERLIN

Parachelifer CHAMBERLIN, 1932, Canadian Ent., vol. 64, p. 19; 1952, Bull. Amer. Mus. Nat. Hist., vol. 99, p. 299.

Pseudoscorpions of the genus *Parachelifer* can be separated from those of other New Mexico genera of Cheliferini by the following combination of characteristics: both seta *b* and seta *sb* present on the cheliceral hand; tarsus of fourth leg with a subterminal microspinule on each subterminal seta and with a tooth on each claw; coxal sacs present in the male; tarsus of the first leg of the male with an apical spine; each median cribriform plate in the female with a diameter less than the diameter of an anterior tracheal trunk. For a complete and emended diagnosis of the genus, see Chamberlin (1952). The genus *Parachelifer* is represented by about a dozen species restricted to the United States and Mexico. Two species are reported for New Mexico. Means of separating the two species are given in the discussion of *P. scabriculus*.

Parachelifer persimilis (Banks)

Chelifer persimilis BANKS, 1909, Canadian Ent., vol. 41, p. 304.
Parachelifer persimilis, CHAMBERLIN, 1932, Canadian Ent., vol. 64, p. 19;

1934, Pan-Pacific Ent., vol. 10, pp. 131, 132. HOFF, 1950, Amer. Mus. Novitates, no. 1448, p. 2.

(?) *Chelifer cancroides* var. *muricatus* EWING (*non* Say), 1911, Jour. New York Ent. Soc., vol. 19, p. 71.

This species has a wide geographical range in the Rocky Mountain region (Hoff, 1950) and is one of the common pseudoscorpions of New Mexico, having been reported as early as 1909 by Banks, who examined specimens from both the northern and southern parts of the state. The report of *Chelifer cancroides* var. *muricatus* from Albuquerque by Ewing (1911) probably is based on a specimen of *Parachelifer persimilis*. Specimens of *P. persimilis* so closely resemble specimens of *Chelifer cancroides* that a mistake in identification easily may be made. In consideration of Ewing's remarks on the structure of his single Albuquerque specimen, it appears reasonable to assume that Ewing actually had a specimen of *Parachelifer persimilis*. It is possible that, at the time Ewing prepared his manuscript for publication, the description of *P. persimilis* had not been published.

In order to establish in the literature the limits of individual variation for this species, the following measurements have been made of specimens from New Mexico. Measurements of 20 males are given as the range of extremes and include: body length 3.0–3.75 mm.; palpal trochanter 0.57–0.64 mm. long, 0.275–0.33 (with only one over 0.31) mm. wide, length 1.95–2.2 times the width; palpal femur 1.15–1.31 mm. long, width 0.225–0.275 (usually between 0.23 and 0.25) mm., length 4.8–5.25 times the width; palpal tibia 0.98–1.13 mm. in length, 0.26–0.32 (with only one specimen over 0.30) mm. wide, length 3.55–3.9 times the width; palpal chela 1.7–2.05 (with only one individual over 1.95) mm. long, width 0.40–0.54 (with one specimen over 0.48) mm., length 3.8–4.35 times the width; chelal hand 0.85–1.00 mm. long, 0.35–0.525 (usually 0.35–0.45) mm. deep; movable chelal finger longer than the hand, 0.93–1.14 mm. in length. Measurements were made of 10 females, all of which are from collections containing males. Measurements are given as extreme ranges of the 10 females and include: body length 3.1–4.5 mm. (abdomen in various stages of contraction); palpal trochanter 0.57–0.64 mm. long, 0.285–0.32 mm. wide, length 1.9–2.1 times the width; palpal femur 1.17–1.28 mm. long, 0.24–0.27 mm. wide, length 4.6–5.0 (rare below 4.8) times the width; palpal tibia 0.98–1.10 mm. long, 0.285–0.32 mm. wide, length 3.4–3.6 times the width; palpal chela 1.74–1.98 mm. long, 0.44–0.52 mm. wide, length 3.75–4.15 (rarely over 4.0) times the width; chelal hand 0.88–1.00 mm. long, 0.38–0.46 mm. deep; length of movable chelal finger 0.91–1.09 mm. Two females have palpi with podomeres, especially the chelae, some-

what stouter than indicated by the above ratios. Neither of these females, however, is accompanied by a male, and this makes species determination somewhat uncertain. For the present, it seems advisable to consider these two females as being conspecific with our other specimens of *Parachelifer persimilis.*

RECORDS: *Bernalillo County:* In house, Albuquerque, about 5000 feet elevation. *Catron County:* Beneath the bark of a yellow-pine stump, near Wall Lake, south of Beaverhead, about 6500 feet elevation. *Lincoln County:* Beneath the bark of a yellow-pine stump, Red Cloud Canyon, Gallinas Peak, 7600 feet elevation; beneath the bark of a yellow-pine log, foothill zone, Gallinas Peak, about 7500 feet elevation; Nogal Canyon, near Nogal, beneath the bark of a yellow-pine log, at about 7200 feet elevation; beneath the bark of a yellow-pine log, near Monjeau Fire Lookout, near Alto, at 9000 feet elevation. *McKinley County:* Beneath the bark of yellow-pine stumps, east of San Mateo on the north side of Mt. Taylor, elevation about 8000 feet. *Rio Arriba County:* Beneath the bark of a yellow-pine stump, east of Canjilon, 8600 feet elevation; beneath the bark of a yellow-pine stump, 6 miles north of El Rito, elevation 7600 feet. *Sandoval County:* All collections from Jemez and Nacimiento Mountains and taken between Jemez Springs and Cuba; from yellow-pine log, 7600 feet elevation; beneath the bark of a yellow-pine stump, 8000 feet elevation; beneath the bark of a yellow-pine log, elevation 8000 feet; in spruce litter, elevation 8100 feet; beneath the bark of a yellow-pine log, 8200 feet elevation; beneath the bark of a dead standing yellow pine, 8400 feet elevation; beneath the bark of a yellow-pine log, elevation 8700 feet; in rotten fir log in an area of fir, aspen, and yellow pine, 8700 feet elevation. *San Miguel County:* Under rotten log, Gallinas Canyon, northwest of Las Vegas, 8000 feet elevation; beneath the bark of a yellow-pine log and stump, west of Cowles, elevation 8400 feet; beneath the bark of a yellow-pine stump, north of Pecos, at 7500 feet elevation. *Socorro County:* Beneath the bark of a dead limber pine (*Pinus flexilis* James) near the top of Mt. Withington, southwest of Magdalena, at 10,275 feet elevation. *Torrance County:* Beneath the bark of a yellow-pine stump, west of Tajique, 7800 feet elevation; beneath the bark of a yellow-pine log, west of Tajique, elevation 7100 feet. *Valencia County:* Beneath the bark of yellow-pine stumps, east side of Mt. Taylor, about 7500 feet elevation; beneath the bark of a yellow-pine log, south side of Mt. Taylor, at 8900 feet elevation; beneath the bark of a yellow-pine stump, near the Lilies, southwest side of Mt. Taylor, at 9000 feet elevation; under bark of a yellow-pine stump, southwest side of Mt. Taylor, 9100 feet elevation; beneath the bark of a yellow-pine log, south side of Mt. Taylor, elevation

9200 feet. It is evident that the typical habitat of *P. persimilis* is beneath the started bark of yellow-pine (*Pinus ponderosa* Lawson) logs and stumps.

Parachelifer scabriculus (Simon)

Chelifer scabriculus SIMON, 1878, Ann. Soc. Ent. France, ser. 5, vol. 8, p. 154 (referred from Chamberlin, 1952).

Chelifer scabrisculis, BANKS, 1902, Proc. Acad. Nat. Sci. Philadelphia, vol. 53, p. 594.

Parachelifer scabriculus, CHAMBERLIN, 1932, Canadian Ent., vol. 64, p. 19; 1952, Bull. Amer. Mus. Nat. Hist., vol. 99, p. 300.

A single specimen, a male, in our collections has been assigned to this species. Our specimen agrees well with the complete description given by Chamberlin (1952) except that the cheliceral galea has six simple subterminal and terminal rami. As a result the galea has an appearance very similar to that shown by Chamberlin for the female and is much in contrast to the male galea, in which the rami are greatly reduced in number and length. In addition to this difference in the galea, our specimen has the tarsus of the first leg more slender than indicated by Chamberlin for *P. scabriculus*. In spite of these differences, it seems advisable to relegate our present male to *P. scabriculus,* at least until more New Mexico specimens are available.

In 1902, Banks reported three specimens of this species from Eagle Creek in the White Mountains, probably Otero County. In 1952, Chamberlin regarded this record "with some skepticism," but if the present determination is correct, then in all probability the record given by Banks is based on correctly determined specimens. In the event that the present specimen is not conspecific with the California *Parachelifer scabriculus,* it must certainly be conspecific with the specimens recorded by Banks from the White Mountains.

The following measurements pertain to our single male specimen: body length about 3.4 mm.; carapace about 1.0 mm. long; palpal trochanter 0.51 mm. long, 0.27 mm. wide; femur 1.05 mm. long, 0.25 mm. wide; tibia 0.94 mm. long, 0.29 mm. wide; chela without pedicel 1.56 mm. in length, 0.43 mm. in width; hand of chela 0.80 mm. long, 0.39 mm. deep; movable chelal finger 0.78 mm. in length.

Parachelifer scabriculus can be separated from *P. persimilis* by the somewhat smaller and stouter palpal podomeres of the former. In addition, the movable chelal finger is a little shorter than the chelal hand in *P. scabriculus,* but is a little longer than the chelal hand in *persimilis.*

RECORD: A single male (in the collections of the American Museum of

Natural History) from Hot Springs (now Truth or Consequences), Sierra County, March, 1925; collector unknown.

LEVICHELIFER HOFF, EMENDED

Levichelifer HOFF, 1946, Bull. Chicago Acad. Sci., vol. 7, p. 486.

DIAGNOSIS (EMENDED): Cheliferin pseudoscorpions with the carapace about as long as wide; surface of carapace granular, with numerous seta-bearing tubercles; one pair of eyes; tergites in general divided, the tergites of the male with distinct tergal crests or keels along the lateral margin, especially in the anterior half of the abdomen; movable chelal finger with tactile seta *st* closer to *t* than to *sb;* coxa of the fourth leg of the male with a strongly developed coxal sac, which is characterized by having the posteromedial surface cribrate in general appearance; coxa of the fourth leg of the male with a lateral spur; subterminal setae and terminal claws of the legs simple except that the claws of the first leg of the male may be slightly modified and distinctive in appearance; tarsus of the first leg of the male without a terminal spine, but in most specimens a raised and somewhat sclerotic area is no doubt the vestige of a spine. The genus contains only the type species, *Idiochelifer fulvopalpus* Hoff, 1946.

REMARKS: Publication of the description of a somewhat peculiar genus, *Ocalachelifer,* by Chamberlin (1949) has called the present writer's attention to the cribrate nature of the medial ends of the coxal sacs in both the genus *Ocalachelifer* and the genus *Levichelifer.* Not only do the two genera agree in detailed structure of the coxal sacs with respect to the cribrate medial surface, but the spiral tubular structures figured by Chamberlin for the coxal sacs of *Ocalachelifer* have also been noticed in all specimens (including a paratype of the type species *fulvopalpus*) of *Levichelifer* examined. The genus *Levichelifer* is distinguished from *Ocalachelifer* by the presence of tergal keels along the sides of the abdomen of the male and by the presence of a weakly sclerotic rod or process in the medial-anterior invagination of the statumen convolutum. In some males of *Levichelifer* it is impossible to demonstrate the presence of a process within the invagination of the statumen convolutum. This may result not from the structure's actually being absent, but either from its being lost during the clearing process or being hidden by the wall of the statumen convolutum.

Levichelifer fulvopalpus (Hoff)

Idiochelifer fulvopalpus HOFF, 1946, Amer. Mus. Novitates, no. 1318, p. 23.

Levichelifer fulvopalpus, HOFF, 1946, Bull. Chicago Acad. Sci., vol. 7, p. 487; 1950, Amer. Mus. Novitates, no. 1448, p. 15.

Hoff (1946a) originally described this species from the type locality, Tamaulipas, Mexico. Later, the same author (Hoff, 1950) reported the species from a number of localities in Texas and from one locality in New Mexico. A study of a number of males has shown that the species exhibits considerable variation in the length/width ratios of podomeres, in spite of the fact that many of the Texas specimens were taken in localities not particularly remote from the type locality. The limits of variation have been recorded by Hoff (1950), who has demonstrated a particularly large variation in the stoutness of the chela. This variation is so great that, when two specimens are compared, the observer is sometimes inclined to recognize each as belonging to a separate and distinct species. Study of a series of specimens indicates, however, that there is no distinct line of demarcation between individuals with stout and those with slender palpal chelae, and, without correlated differences, it seems wise to recognize all the specimens as being conspecific. Our present specimens show measurements and length/width ratios that are well within the general limits recorded by Hoff (1950). The single male previously reported from near Silver City (Hoff, 1950) agrees well with our present series of four males from east of Carlsbad, except that the Silver City specimen has slightly more slender palpal podomeres.

Measurements of four males from our present Eddy County collections are given here as extreme ranges: length of body 2.1–2.3 mm.; palpal trochanter 0.36–0.38 mm. long, width 0.20–0.215 mm., length 1.75–1.8 times the width; palpal femur 0.76–0.82 mm. long, 0.165–0.175 mm. wide, length 4.6–4.8 times the width; palpal tibia 0.70–0.75 mm. long, 0.19–0.205 mm. wide, length 3.6–3.75 times the width; palpal chela 1.20–1.26 mm. in length, 0.275–0.30 mm. in width, length 4.1–4.4 times the width; chelal hand 0.55–0.60 mm. long, 0.25–0.28 mm. deep; movable chelal finger 0.68–0.71 mm. long.

RECORDS: *Eddy County:* Five males and three nymphs taken in two collections from shin-oak litter, Maroon Cliffs area, east of Carlsbad, about 3500 feet elevation. *Grant County:* One male, previously reported by Hoff (1950), from a *Neotoma* nest, near Silver City, elevation estimated as about 6000 feet.

HYSTEROCHELIFER CHAMBERLIN

Hysterochelifer CHAMBERLIN, 1932, Canadian Ent., vol. 64, p. 18. BEIER, 1932, Das Tierreich, vol. 58, p. 230. HOFF, 1946, Bull. Chicago Acad. Sci., vol. 7, p. 489.

DIAGNOSIS: Typically cheliferoid in general appearance; eyes present; coxal sacs present in the male; tergites of male with well-developed keels; fixed chelal finger with seta *it* about midway between the levels of *et* and *est,* at least not nearly twice as far from *et* as from *est;* chelicera with four (*sb* absent) or five setae on the hand; tarsal claws of the fourth leg not dentate, but simple and undivided; fourth pedal tarsus with denticulate subterminal setae; fourth pedal coxae of the male with well-developed lateral spurs; foreclaws of the first leg of the male asymmetrical and strongly dissimilar; first pedal tarsus with a well-developed terminal or apical spine; a rod present in the anterior invagination of the statumen convolutum.

TYPE SPECIES: *Chelifer fuscipes* Banks, 1909.

REMARKS: From a survey of the literature, it is clear that the genus *Hysterochelifer* frequently has been used in a much more broad, unrestricted, and variable sense than originally intended by Chamberlin (1932). On consideration of the genus within the confines set by such European authors as Beier (1932, 1949), it is clear that the genus could conveniently be subdivided into at least two genera. This would bring the genus into the usual restricted limits demonstrated by related genera. In order to stabilize and restrict the genus, especially as it relates to North American forms, the above diagnosis has been given in some detail. In general, the diagnosis has been compiled from the characters given by Chamberlin (1932) in his key to the genera of the Cheliferinae.

Attention should be directed to the fact that the type species of the genus, *H. fuscipes,* is characterized, according to the information published by Chamberlin (1923), by having the tactile seta *sb* wanting from the cheliceral hand. On the basis of this character, it would be possible to restrict the genus more than indicated in the diagnosis given here. However, such restriction is not desirable and is perhaps entirely unwarranted, because the presence or absence of *sb* may prove so variable and unreliable that the character is unsuited even for use in species characterizations. This is especially true as Hoff (1950) has shown that in a related genus, *Paisochelifer* Hoff, 1946, the tactile seta *sb* of the cheliceral hand may be present or absent within a single species, and on occasion an additional seta may be inserted between setae *b* and *sb* on the cheliceral hand. If future study shows that the absence of *sb* from the cheliceral hand of *H. fuscipes* is constant, it may be desirable to erect a new genus, with *H. proprius* as the type species, the species of this new genus being characterized by the presence of *sb* on the cheliceral hand.

Two species of *Hysterochelifer* are reported here from New Mexico.

These can be separated by differences discussed under the remarks relative to the description of *H. urbanus,* new species.

Hysterochelifer proprius Hoff

Hysterochelifer proprius HOFF, 1950, Amer. Mus. Novitates, no. 1448, p. 4.

This species, which was originally described from Flagstaff, Arizona, is recorded here for the first time from New Mexico. Our specimens, especially the males, agree well with the original description as given by Hoff (1950). Limited material, especially for the female, makes difficult detailed comparisons between specimens from the type locality and those from New Mexico. From the small number of available specimens, there are no possibilities of determining the actual range of variation to be expected in this species. Certain minor differences in the shape and length/width ratios of palpal podomeres in our New Mexico specimens and in the specimens from Arizona are probably the result of individual variation, which is possibly as great in this species as in much better known species of this and related genera. A difference that is somewhat difficult to explain on the basis of individual variation, however, is the close similarity between the lengths of the chelal hand and the chelal fingers in our present specimens, because in the type specimens the chelal hand is longer than the fingers. Future study may indicate that this difference actually results from individual variation. Because the characteristics of the tarsus and tarsal claws of the first leg of the male are regarded as being of considerable taxonomic importance, the similarity between the first pedal tarsus of our present males and of the male holotype from Arizona definitely indicates that the New Mexico and Arizona specimens are conspecific. Measurements of the two New Mexico males are given here, with the measurements for the individual from Taos County following in parentheses the corresponding measurements of the male from San Juan County. Body length 2.7 (3.1) mm., carapace 0.86 (0.90) mm. long; palpal trochanter 0.48 (0.50) mm. long, 0.24 (0.27) mm. wide; femur 0.98 (1.00) mm. long, 0.21 (0.225) mm. wide; tibia 0.87 (0.89) mm. long, 0.25 (0.27) mm. wide; chela 1.45 (1.45) mm. long, 0.36 (0.38) mm. wide; hand of chela 0.74 (0.75) mm. long, 0.24 mm. deep; movable chelal finger 0.74 (0.75) mm. in length. Measurements for the lengths of palpal podomeres of the single female from New Mexico agree well with the measurements of lengths of the podomeres of the present males and of the female allotype, but there is considerable variation among these specimens in the length/width ratios of the palpal femur and tibia.

The femur and tibia of the present New Mexico female are unusually slender. The significance of this difference is unknown and may result from individual variation. Measurements for the present female include: body length 3.2 mm.; carapace 0.93 mm. long; palpal trochanter 0.49 mm. long, 0.25 mm. wide; femur 1.02 mm. long, 0.21 mm. wide; tibia 0.92 mm. in length, 0.25 mm. in width; length of chela 1.45 mm., width 0.41 mm.; chelal hand 0.77 mm. long, 0.33 mm. deep; movable chelal finger 0.77 mm. long.

RECORDS: *Grant County:* One female from the flowering stalk of the soaptree yucca (*Yucca elata* Engelmann) near City of Rocks, about 25 miles southeast of Silver City, at an estimated elevation of 5300 feet. *San Juan County:* One male from clothes drying on a line, Aztec, about 5600 feet elevation. *Taos County:* One male beneath flakes of bark on the trunk of a living yellow-pine tree in Lama Canyon, near Questa, elevation between 8000 and 8500 feet.

Hysterochelifer urbanus, new species

Figures 1–5

MALE: The description of the male is based on six individuals, the holotype and five paratypes. Measurements and ratios given for the holotype are followed in many instances by the range for all six males. These ranges are enclosed in parentheses. Body fairly stout, appendages moderately slender, palpi typically cheliferoid in appearance; abdomen, carapace, and legs golden yellow in color; palpi of a deeper golden color, sometimes tinged with brown; setae of carapace and tergites weakly clavate, setae of sternites acuminate except for a few paucidenticulate setae on the tenth and eleventh sternites, setae of palps varying from clavate on the trochanter to paucidenticulate on the chelal hand and acuminate on the fingers; body 2.1 (2.1–2.3) mm. long. Carapace somewhat triangular in general outline; coarsely granulate with numerous setiferous papillae; posterior transverse furrow much closer to the posterior carapacal margin than to the median transverse furrow; posterior margin usually a very little concave, lateral margins little convex except in the anterior one-third; about 10 setae along the posterior carapacal margin; eyes fairly conspicuous; a definite but not strongly developed keel on each posterolateral corner of the carapace; carapace a little wider than long; length 0.73 (0.67–0.73) mm., greatest width across the posterior margin 0.79 (0.69–0.81) mm., ocular width of holotype 0.43 mm. Abdomen ovate in general outline; tergites except the anterior three

divided; surface of tergites coarsely granulate, each tergal half of the central part of the abdomen with usually five or six clavate setae in a posterior row and in addition a seta on the medial and one on the lateral margin; strongly developed lateral keels on the anterior tergites, these becoming less strongly developed in the central part of the abdomen and weakly developed to obsolete in the posterior three or four tergites; sternites divided, with the division of the fourth sternite sometimes obsolete; surface of sternites somewhat less granulate than the surface of the tergites; eight to 12 acuminate setae along the posterior margin of the entire fourth sternite, each sternal half of the central part of the abdomen with usually eight to 11 acuminate setae of somewhat variable length; a pair of pseudotactile setae on the tenth and on the eleventh sternite; some of the setae of the more posterior sternites paucidenticulate; posterior stigmatic plate with one seta, anterior stigmatic plate asetaceous; pleural membranes roughly striate; abdomen of holotype about 1.05 mm. in width.

Chelicera yellow in color, base stout, fingers somewhat slender; base of chelicera with a few moderately developed net-like lines; setae *b* and *sb* with a very few subterminal spinules, sometimes appearing acuminate; flagellum of three setae, two subequal in length, the shortest about three-fourths to two-thirds of the length of each of the longer setae, anterior margin of anterior seta with three to six spinules. Fixed finger slender and gently curved, lamina exterior strongly developed; inner margin of finger with three retroconical teeth near the distal end, three denticles on the inner margin of the apical tooth; serrula interior with terminal four plates serrate and free. Movable finger gently curved; serrula exterior of 16 to 19 plates, with 14 plates in one chelicera of one paratype; subapical lobe moderately developed and conical in general shape, apical tooth bicuspid in some specimens; galea basally stout and tapering towards the distal end, with three or four simple and short rami confined to the distal one-fourth; galeal seta reaching to about the level of the end of the galea. Chelicera of holotype 0.205 mm. long, 0.12 mm. wide; movable finger 0.167 mm. in length.

Palpus with all surfaces moderately to strongly granulate except granulations usually a little less strongly developed on the extensor surface of the tibia and always much less well developed on the chelal hand, fingers non-granulate; setae moderately clavate on trochanter and on the flexor surface of femur, thickened and moderately denticulate to paucidenticulate on extensor surface of the femur, on the tibia, and on the chelal hand. Trochanter with a fairly well-developed, lateral-dorsal protuberance; flexor margin gently convex; pedicel wider than long; trochanter 0.35

(0.35–0.37) mm. long, 0.18 (0.175–0.19) mm. wide, length 1.94 (1.9–2.0) times the width. Femur with pedicel poorly differentiated and wider than long; flexor surface of femur straight to very weakly concave, extensor surface flatly convex except near the proximal and distal ends; greatest width just within the distal one-fourth; length 0.71 (0.71–0.78) mm. long, 0.16 (0.155–0.17) mm. wide, length 4.44 (4.3–4.56) times the width. Tibia with pedicel about as long as wide; extensor margin flatly convex (weakly and evenly convex in one paratype), but becoming a little more convex near the ends; flexor margin weakly and evenly convex except nearly straight near the extreme distal end; length 0.64 (0.61–0.69) mm., width 0.195 (0.19–0.20) mm., length 3.28 (3.15–3.45) times the width. Chela from the dorsad with pedicel near the center of the basal margin of the hand; hand narrowed gradually towards the finger base; flexor margin moderately convex in the basal portion but weakly convex beyond; extensor margin gently to flatly convex but becoming more convex in the proximal part; basal margin rounded; finger slender, gently and evenly curved; length of chela 1.12 (1.07–1.15) mm., width 0.28 (0.27–0.29) mm., length 4.0 (3.75–4.1) times the width. From the side chelal hand and fingers are slender in appearance; pedicel near the center of the well-rounded basal margin or displaced a little towards the ventral side; ventral margin of hand very weakly and flatly convex to almost straight, dorsal margin weakly and evenly convex, both ventral and dorsal margins merging into the basal margin without angulation; hand subcylindrical in outline and not narrowed appreciably towards the finger base; fixed finger straight and with about 45 teeth along the margin, a few anterior teeth conical in general appearance, the remainder retroconical, with those of the posterior one-third of the row often somewhat flatly retroconical; nodus ramosus of fixed finger located at the level of or just proximal to tactile seta *it;* movable chelal finger with marginal teeth like those of the fixed finger, nodus ramosus at the level of or a little proximal to tactile seta *t;* tactile setae as shown in figures 1 and 2; hand 0.56 (0.52–0.61, with the hand of only one paratype greater than 0.56) mm. long, 0.25 (0.24–0.26) mm. deep; movable chelal finger 0.62 (0.57–0.62) mm. long, with the finger in every instance (except one paratype in which the hand is abnormally long) definitely longer than the hand.

Legs of golden color; surface of all podomeres sculptured with scale-like lines appearing as granules in profile view, especially on the femur; setae variable, those of trochanter and femur usually flattened and denticulate as are those of the extensor surfaces of the tibia and tarsus, flexor surfaces of tibiae with setae varying from paucidenticulate to acuminate,

setae of flexor surface of tarsi acuminate. First leg with trochanter 0.147 mm. long, 0.109 mm. deep; pars basalis with flexor margin evenly and gently convex, over-all length 0.245 mm., depth 0.135 mm.; pars tibialis with both margins gently and evenly convex, over-all length 0.32 mm., depth 0.112 mm.; tibia with extensor margin almost straight or a very little concave except in the weakly convex proximal fourth, flexor margin moderately convex, 0.32 mm. long, 0.095 mm. deep; tarsus subcylindrical, flexor margin nearly straight or very weakly convex, extensor margin with a marked sinus in the distal one-third, apical spine well developed, length 0.33 mm., depth 0.080 mm.; tarsal claws asymmetrical, the anterior claw hook-like, without accessory tooth, and somewhat similar to tarsal claws of other legs; posterior claw of tarsus strongly bent just beyond the midpoint and bearing a tooth on the outer surface near the distal one-fourth of the claw. Fourth leg with trochanter 0.25 mm. long, 0.147 mm. deep; pars basalis subtriangular, length 0.183 mm., depth 0.135 mm.; pars tibialis with a straight to very weakly concave flexor margin continuous with the flexor margin of the pars basalis, proximal part of extensor margin moderately convex but gradually becoming less convex in the distal portion, frequently a few setiferous papillae appear in profile view along the extensor margin, 0.47 mm. long, 0.175 mm. deep; entire femur 0.59 mm. long; tibia with extensor margin somewhat convex in the basal one-fifth but weakly to moderately and regularly concave beyond, flexor margin gently and regularly convex, length 0.475 mm., depth 0.095 mm ; tarsus subcylindrical, a little narrowed distally, length 0.41 mm., depth 0.069 mm., tactile seta of extensor surface located 0.31 mm. from the proximal margin of the tarsus.

External genitalia of male as described for the genus; sclerotic rod of the anterior invagination of the statumen convolutum not extending beyond the invagination; anterior operculum with large numbers of closely set setae along the anterior margin, the medial face, and the posterior margin; posterior operculum with six to nine specialized setae flanking the aperture and with a few acuminate setae on the face of the operculum.

FEMALE: Description is based on eight females, the allotype and seven paratypes. Measurements of the ranges of all eight specimens follow in parentheses corresponding measurements of the allotype. Female like the male in general body shape, color, and chaetotaxy, but differing from the male by being larger in size of body and appendages. In addition, the carapace is usually less triangular in general shape, and the appendages are somewhat stouter; all tergites usually divided, but division of anterior three may be obscure; body 2.4 (2.4–3.1) mm. long, carapace 0.83 (0.78–0.86) mm. long, posterior width of carapace of allotype 0.74 mm.,

ocular width 0.45 mm.; length of abdomen of allotype 1.55 mm., width about 1.2 mm. Chelicera of the female like that of the male except for slightly greater size and differences in the galea; galea with six or seven short acute rami in the distal one-third or one-half, galea not narrowed distally as in the male; serrula exterior with 17 to 19 plates; allotype with chelicera 0.24 mm. long, base 0.125 mm. wide, movable finger 0.175 mm. long. Palpus of female much like that of the male in general outline of podomeres, in color, in surface sculpturing, and in chaetotaxy, but differing from the male by having the podomeres larger and on the average a little stouter. The degree of development of the granulations on the extensor surface of the tibia and chelal hand is variable, the granules sometimes being as strongly developed as on the femur. Trochanter of palpus of female with flexor surface well rounded, 0.41 (0.40–0.45) mm. long, 0.22 (0.21–0.25) mm. wide, length 1.87 (1.8–1.95) times the width; femur as in the male, 0.79 (0.72–0.86) mm. long, 0.195 (0.19–0.22) mm. wide, length 4.05 (3.78–4.05) times the width; tibia 0.74 (0.67–0.77) mm. long, 0.23 (0.22–0.26) mm. wide, length 3.22 (2.95–3.25) times the width. Chela with pedicel near the center of the rounded basal margin, extensor margin flatly convex in the center but more convex near the ends, flexor margin gently but weakly convex, hand more abruptly narrowed near the finger base than in the male; length of chela 1.26 (1.21–1.37) mm., width 0.35 (0.33–0.38) mm., length 3.61 (3.45–3.7) times the width. Chela from the side much as in the male except that the hand appears a little stouter; marginal teeth of chelal fingers and nodi ramosi as in the male; tactile setae as in figures 4 and 5; chelal hand 0.64 (0.60–0.69) mm. long, 0.31 (0.30–0.34) mm. deep; movable finger 0.65 (0.61–0.71) mm. long. Legs of female like those of the male except that the first pedal tarsus is subcylindrical, being somewhat narrowed distally and similar in general shape to the tarsus of the fourth leg. First leg of allotype with trochanter 0.18 mm. long, 0.12 mm. deep; over-all length of pars basalis 0.255 mm., depth 0.135 mm.; over-all length of pars tibialis 0.35 mm., depth 0.12 mm.; tibia 0.35 mm. long, 0.092 mm. deep; tarsus 0.38 mm. in length, depth 0.067 mm. Fourth leg of allotype with trochanter 0.30 mm. long, 0.151 mm. deep; pars basalis 0.22 mm. long, 0.152 mm. deep; pars tibialis 0.56 mm. long, 0.215 mm. deep; entire femur 0.70 mm. in length; tibia 0.55 mm. long, 0.115 mm. deep; tarsus 0.44 mm. in length, 0.084 mm. in depth; tactile seta of extensor surface of tarsus removed by 0.34 mm. from the proximal margin of the tarsus. Genitalia of female with setae varying greatly in number; with usually four to 10 setae on the face of the anterior operculum and about 14 to 20 setae in a row flanking the aperture; posterior operculum with usually

12 to 16 setae along the posterior margin; lateral cribriform plates appearing disc-like and each having a diameter greater than twice the diameter of each of the hemispherical medial plates.

REMARKS: *Hysterochelifer urbanus* differs from other species of the genus by peculiarities of shape, length, and length/width ratio of palpal podomeres. When only North American species are considered *H. urbanus* differs from *H. proprius* in the conspicuously smaller size of palpal podomeres and the more shallow sinus and less strongly modified claws of the tarsus of the first leg of the male, from *H. geronimoensis* (Chamberlin, 1923) by a much more slender chela and by the fact that the chelal fingers are longer than the hand, and from *H. fuscipes* (Banks, 1909) by the presence of tactile seta *sb* on the chelal hand (although as discussed above the presence or absence of *sb* may not be a generic or a specific constant) and by a much more slender and differently shaped chela as shown in a comparison of our specimens with the figure given by Chamberlin (1931, fig. 30-0).

In addition to the type specimens, on which the above description is based, our collections contain numerous other individuals, chiefly females and nymphs. A study of several of these females shows a close morphological agreement with the type females except that the lengths and length/width ratios of palpal podomeres, especially of the chelae, do not always fall within the limits established from a study of the type material. There is no reason, however, to consider any of the females as belonging to another species, especially as the females are accompanied by males. Clearly there is a greater degree of variation in the palpal chela of the females than occurs in the chela of the males of this species.

NYMPHS: No study has been made of the numerous available nymphs.

RECORDS: *Bernalillo County:* The male holotype, the female allotype, one male paratype, and seven female paratypes from beneath a board in Albuquerque, elevation about 5000 feet; a second collection from beneath a board in Albuquerque; a collection from a house in Albuquerque; one collection from beneath a stone across the Rio Grande from Alameda, elevation about 5000 feet; one male paratype and other specimens from cottonwood litter just north of Alameda, elevation 5000 feet. *Sandoval County:* One male paratype and other individuals from cottonwood litter near the Rio Grande, west of Bernalillo, elevation just below 5000 feet; numerous specimens, including one paratype male, from cottonwood litter, just south of Bernalillo, elevation about 5000 feet. *Socorro County:* Several individuals, including one male paratype, from dry cottonwood litter on the Rio Grande flood plain, 8 miles south of Socorro, at an elevation of about 4500 feet. From the records, it is clear that the species is

associated with cottonwoods. It is interesting to note the occurrence of large numbers of mature cottonwoods in the Albuquerque areas from which the species has been taken.

PHOROCHELIFER, NEW GENUS

DIAGNOSIS: Of the usual cheliferoid appearance; eyes present; coxal sacs in the male; anterior tergites of male with at least moderately developed lateral keels; fixed chelal finger with tactile seta *it* almost twice as far from *et* as from *est;* tarsal claws of the fourth leg simple and subterminal setae denticulate; fourth pedal coxa of the male without lateral spur; claws of the first leg of the male differing strongly from those of the other legs; tarsus of the first leg of the male with a strongly developed apical spine; anterior invagination of the statumen convolutum with a sclerotic rod. A single species, the type species, presently assigned to the genus.

TYPE SPECIES: *Phorochelifer mundus,* new genus and new species.

REMARKS: The present genus is very closely related to the genus *Hysterochelifer* and will key to *Hysterochelifer* by use of the key to genera given by Beier (1932), but not by use of keys given by Chamberlin (1932) and Hoff (1946b). *Phorochelifer* is separated from *Hysterochelifer* by the absence of spurs on the fourth coxae and the fact that tactile seta *it* of the fixed chelal finger is much closer to *est* than to *et.* In view of the poor and inadequate descriptions of many cheliferoid pseudoscorpions, it is impossible to assign previously described species to this genus, although conceivably some may belong here.

Phorochelifer mundus, new genus and new species

Figures 6–10

MALE: The male is known from a single individual, the holotype. Carapace, abdomen, and legs of golden color, palps of deeper golden color; setae of carapace and tergites short and lightly clavate, setae of palps varying from short and clavate to short acuminate; body and appendages typically cheliferoid in appearance; body 2.4 mm. long. Carapace subtriangular in outline; posterior transverse furrow much closer to the posterior margin than to the median furrow; surface coarsely granulate, bearing numerous setiferous papillae which are particularly noticeable in profile view; posterior margin nearly straight, lateral margins gently convex, anterior margin rounded; about 12 setae along the posterior margin; one pair of well-developed eyes; length of carapace

0.83 mm., greatest width 1.0 mm., ocular width 0.45 mm. Abdomen ovate and stout; tergites divided, surface coarsely granulate; tergal halves of central part of abdomen with seven to nine setae, chiefly forming a marginal row except for a seta at the medial end, sometimes one in the center of the half tergite, and one at the lateral end; sternites divided except the fourth very weakly so, fourth sternite with 14 acuminate setae, sternal halves of central part of abdomen with about 10 setae, all setae of sternites acuminate; each sternal half of the tenth and eleventh segments with a somewhat short pseudotactile seta; pleural membranes roughly striate; posterior stigmatic plate with one seta, anterior plate asetaceous; keels developed on anterior six or seven tergites but very poorly formed or absent on the more posterior tergites; abdomen about 1.25 mm. wide.

Chelicera fairly stout, yellow in color; base with net-like lines at base of setae; setae *b* and *sb* with no more than one or two microspinules, possibly acuminate in some cases; flagellum with three setae, two subequal in length and the shortest two-thirds to three-fourths of the length of the longest seta, anterior margin of distal seta with several spinules. Fixed finger gently curved, lamina exterior wide; three retroconical teeth near the distal end of the inner margin of the finger and three denticles on the inner margin of the apical tooth; distal five plates of serrula interior free and serrate. Movable finger relatively stout; subapical lobe conspicuous and well developed; serrula exterior of 17 plates; galea acutely pointed and with one or two short and acute rami in the distal one-half; galeal seta extending beyond the level of the tip of the galea; length of chelicera about 0.25 mm., width of base 0.14 mm., movable finger about 0.19 mm. in length.

Palpus of male coarsely granulate except for extensor surface of chelal hand; setae of trochanter and flexor surfaces of femur and tibia short but distinctly clavate and often originating from a papilla; setae of extensor surfaces of femur, tibia, and hand somewhat widened but not clavate, characterized by only a few terminal and subterminal microspinules on each seta. Trochanter with pedicel about as wide as long and well differentiated from the rest of the podomere; flexor margin well rounded; dorsal protuberance very strongly developed; 0.45 mm. long, 0.255 mm. wide. Femur with pedicel about as long as wide and well separated from the rest of the podomere; flexor margin very little concave to virtually straight; extensor margin flatly convex except more convex near the ends; greatest width at about the distal one-fifth; length 0.87 mm., width 0.22 mm. Tibia with pedicel as long as wide; flexor margin gently and evenly convex; extensor margin flatly convex except near the ends; 0.78 mm. long, 0.25 mm. wide. Chela with hand subcylindrical; pedicel near

center of basal margin; both flexor and extensor margins very little convex; a week angulation formed by the juncture of the basal and extensor margins; fingers slender and well curved; length of chela 1.30 mm., width 0.34 mm. From the side, chela of male with hand distinctly cylindrical in outline; basal margin rounded, both ventral and dorsal margins nearly straight and parallel except that the dorsal margin becomes weakly convex near the base of the fixed finger; pedicel near the center of the basal margin; about 50 teeth along the inner margin of each finger; fixed finger with nodus ramosus just distal to the level of tactile seta *it;* nodus ramosus of movable finger at the level of tactile seta *t;* tactile setae as shown in figures 6 and 7; hand 0.65 mm. long, 0. 30 mm. deep; movable finger 0.68 mm. in length.

Legs fairly stout, surface of all podomeres well marked by scale-like lines which appear as granules in profile view; setae somewhat short, those of the extensor surface of podomeres flattened, terminally and subterminally paucidenticulate, often almost subclavate; setae of the flexor surfaces of podomeres usually acuminate. First leg with pars basalis strongly widened beyond the well-separated pedicel, flexor margin evenly and moderately convex, over-all length 0.32 mm., depth 0.19 mm.; pars tibialis with a bulge near the center of the flexor side, extensor margin gently convex except a little concave just proximal to the distal end; over-all length of pars tibialis 0.40 mm., depth 0.16 mm.; tibia stout, extensor margin very weakly S-shaped, flexor margin strongly convex and somewhat bulging, length 0.385 mm., depth 0.147 mm.; tarsus subcylindrical and with flexor margin convex in the basal one-third but very weakly concave beyond, extensor margin very weakly convex except for a shallow sinus in the distal one-third; tarsus with well-developed and stout apical spine, tarsal claws strongly differentiated, the anterior claw somewhat hook-shaped and not much different from the claws of the other legs, the posterior claw sharply bent just beyond the center and with a well-developed tooth just distal to the angulation or bend of the claw; tarsus 0.395 mm. long, 0.115 mm. deep. Fourth leg without a spur on the fourth coxa, but with a small, tooth-like process located on the subanterior margin some distance medially from the anterolateral corner (which is the position occupied by a lateral spur when one occurs on the coxa); trochanter 0.32 mm. long, 0.18 mm. deep; pars basalis with the flexor margin flatly and weakly convex, 0.25 mm. long, 0.175 mm. deep; pars tibialis with flexor margin almost straight and continuous with the flexor margin of the pars basalis; pars tibialis with extensor margin well rounded and marked by several setiferous papillae, length 0.59 mm., depth 0.26 mm.; entire femur 0.73 mm. long; tibia with flexor margin

evenly and moderately convex, extensor margin convex at the very basal end but very weakly concave to straight along the rest of the margin, length 0.55 mm., depth 0.135 mm.; tarsus subcylindrical, length 0.43 mm., depth 0.094 mm.; tarsus with a tactile seta located near the distal end at a distance of 0.335 mm. from the proximal margin of the tarsus.

Genitalia with anterior operculum very setaceous on the anterior and medial portions and with a row of setae along the posterior margin flanking the aperture; posterior operculum with four spinulate setae flanking the aperture on each side of the median line, with eight acuminate setae along the posterior margin, and with a few setae on the face of the operculum; sclerotic rod well developed.

FEMALE: The description of the female is based on one individual, the allotype. General shape, sculpturing, color, and chaetotaxy much as in the male; female differing from the male chiefly by having a much stouter chela. Body length 3.2 mm.; carapace 0.93 mm. long, 0.91 mm. in greatest width, 0.46 mm. in ocular width; abdomen about 1.4 mm. wide. Chelicera of the female like that of the male except for the more strongly branched galea which has five or six simple but acute rami in the distal one-half; chelicera 0.25 mm. long, 0.15 mm. wide, movable finger 0.205 mm. in length; position precludes accurate count of plates of serrula exterior. Palp of female like that of the male except for the stouter and much less cylindrical chelal hand, which tapers more conspicuously towards the base of the fingers; trochanter 0.45 mm. long, 0.25 mm. wide; femur 0.89 mm. long, 0.225 mm. wide; tibia 0.81 mm. in length, 0.28 mm. in width; chela 1.37 mm. long, 0.42 mm. wide; hand 0.71 mm. in length, 0.35 mm. in depth; movable chelal finger 0.71 mm. long. From the side, chela of female with hand slightly less cylindrical than in the male; pedicel displaced a little towards the ventral side; basal margin well rounded, ventral and dorsal margins nearly straight; both fingers nearly straight and with teeth similar in number to those of the male; nodus ramosus of fixed finger a little distal to tactile seta *it;* nodus ramosus of the movable finger located at the level of tactile seta *t*. Legs of the female like those of the male in sculpturing but all setae usually at least paucidenticulate and seldom acuminate; first leg differing strongly from that of the male by having more slender podomeres with margins less convex. In addition, the tarsus of the first leg of the female resembles closely the tarsus of the fourth leg in general appearance. First leg of female with trochanter 0.18 mm. long, 0.143 mm. deep; pars basalis with evenly convex flexor margin, over-all length 0.29 mm., depth 0.172 mm.; pars tibialis with margins evenly and gently convex, over-all length 0.39 mm., depth 0.15 mm.; tibia with extensor margin weakly S-shaped, flexor margin gently

to weakly convex, length 0.375 mm., depth 0.112 mm.; tarsus subcylindrical, narrowing but little towards the distal end, length 0.36 mm., depth 0.081 mm. Fourth leg much as in the male except that the flexor margin of the femoral parts is more nearly straight and the extensor margin of the tarsus is a little convex; pars basalis 0.255 mm. long, 0.165 mm. deep; pars tibialis 0.63 mm. long, 0.25 mm. deep; entire femur 0.75 mm. long; tibia 0.58 mm. long, 0.136 mm. deep; tarsus 0.43 mm. long, 0.099 mm. deep; tactile seta of tarsus removed from proximal margin by 0.315 mm. Genitalia with about 21 setae in a row on the anterior operculum flanking the aperture and only four additional setae on the face of the operculum; posterior operculum with 14 setae along the posterior margin; median cribriform plates oval in outline and each with a diameter of about one-half that of the lateral plates.

RECORDS: *Santa Fe County:* The female allotype taken from a nest of *Neotoma albigula* Hartley, near Santa Fe, at an elevation between 6500 and 7000 feet. *Valencia County:* The male holotype obtained by sweeping the branches of a yellow-pine tree on the southwest side of Mt. Taylor, near Grants, at an elevation of 9100 feet.

Cheliferini, genus and species not determined

In our collections occur two unidentified specimens, a male and a female, that are apparently conspecific and are from different localities. These may belong to the genus *Hysterochelifer,* or they may belong to an undescribed genus; they are being held for future study. As classification within the Cheliferini is based very largely on structures restricted to the male, there is considerable difficulty in determining, even to genus, isolated females and nymphs. As a result, our collections contain numerous unidentified nymphs and females. These are being held in expectation of obtaining comparative material that will facilitate identification.

JUXTACHELIFERINI, NEW TRIBE

DIAGNOSIS: Cheliferin pseudoscorpions in which a short but heavy, sclerotic, rod-like process lies in the triangular-shaped invagination of the anterior margin of the statumen convolutum of the male; coxal sacs and ramshorn organs absent; single median cribriform plate of female genitalia in the form of an elongated band. A single species, *Juxtachelifer fructuosus,* new genus and new species, from New Mexico, is assigned to the tribe. As far as known, no species described previously in the literature belongs to this tribe.

TYPE: The genus *Juxtachelifer,* new genus.

REMARKS: The new tribe resembles the Cheliferini by having the an-

terior margin of the statumen convolutum invaginated and bearing a rod-like process, but differs from the Cheliferini by having in the female a single median cribriform plate that is ribbon-like in shape, not disc-like and paired as in the Cheliferini. The new tribe differs from the Dactylocheliferini by having a median process in the invagination of the statumen convolutum and by having a ribbon-like cribriform plate rather than an irregular median oval cribriform plate. In addition, our new tribe differs from both the Dactylocheliferini and the Cheliferini by having four instead of three setae in the flagellum of the chelicera.

To a limited degree, certain features of our new tribe suggest possible affinities with the subfamily Withiinae. These common features include the slightly oblique nature of the femoral articulation of the first and second legs, the four setae in the cheliceral flagellum, and the nature of the median cribriform plate of the female genitalia. However, the absence of restricted areas of microsetae or microlyrifissure sensory structures on one or more of the sternites of the male and the presence of the statumen convolutum in the male genitalia preclude assignment of the present form to the subfamily Withiinae.

JUXTACHELIFER, NEW GENUS

DIAGNOSIS: With the characteristics of the tribe Juxtacheliferini.

TYPE SPECIES: *Juxtachelifer fructuosus*, new genus and new species. At present, the type species is the only species assigned to the genus.

Juxtachelifer fructuosus, new genus and new species

Figures 11–15

MALE: The description of the male is based on the holotype and 12 paratypes. Measurements of the holotype are in many instances followed in parentheses by the range for all 13 males. Body form typically cheliferoid; golden yellow color, with the palpi a little darker than the legs and abdomen; setae of carapace and sternites moderately long, weakly clavate to merely flattened and paucidenticulate; setae of palpal podomeres chiefly short and paucidenticulate, somewhat flattened; setae of the legs varying from subclavate to acuminate; body length 3.0 (2.9–3.3) mm. Carapace longer than wide; either widest across the posterior margin or a little wider near the center of the carapace than elsewhere; lateral margins somewhat subparallel; transverse furrows very conspicuous and well marked; surface of carapace strongly and coarsely granulate; setae somewhat widened distally but no more than very weakly clavate and

terminally paucidenticulate; eight to 10 setae along the posterior carapacal margin; one pair of well-developed eyes present; carapace 0.91 (0.88–0.95) mm. long, width along the posterior margin 0.66 (0.59–0.73) mm., greatest width 0.66 (0.60–0.74) mm., ocular width 0.44 (0.42–0.49) mm. Abdomen elongate-elliptical in general outline; pleural membranes with fine irregular striations; abdomen of holotype about 2.9 mm. long and 1.1 mm. wide. Tergites virtually as granulate as the carapace; a small central area with different sculpturing and pigmentation on most half tergites; all tergites divided; membranous areas between successive tergites wide and unpigmented; setae of tergal halves distally somewhat broadened and denticulate as are those found on the face of the carapace; each scutum of first tergite with four or five setae in a marginal row, each tergal half of the second with five or six setae in a uniseriate row; halves of third to tenth tergites inclusive with five or six setae in a marginal row and one seta near the lateral margin of each scutum; each tergal half of the eleventh segment with a sublaterally placed, long, acuminate seta. Sternites divided, the division of the fourth to eighth weak but distinct, division of ninth to eleventh much more conspicuous; sculpturing of sternites net-like, very weak on the anterior sternites but more conspicuous on the darker and more sclerotic posterior sternites; surface of sternites with numerous microlyrifissures; setae acuminate except for a few microspinules on some of the setae of the more posterior sternites; the setae of each sternal half in a uniseriate row, with the second seta lateral to the midventral line much longer than the others; four to five setae on each half of the fourth sternite, increasing to seven or eight on each half of the seventh sternite, ninth and tenth sternites with five or six setae in a marginal row and one seta near the lateral margin; eleventh sternite with four setae on each half, of which one is a long, acuminate seta; anterior stigmatic plate asetaceous, posterior plate with one fairly stout seta.

Chelicera light yellow in color; base fairly stout, somewhat square in outline; laminal seta inserted at base of fixed finger and extending often to a level beyond the tip of the galea, interior seta also long and extending in some specimens to about the level of the end of the movable finger; exterior seta fairly long and acuminate; basal seta not particularly long, appearing acuminate in some specimens but actually with one or a very few terminal and subterminal microspinules; subbasal seta wanting; sculpturing consisting of a few net-like lines on the palm of the hand; chelicera 0.233 mm. long, 0.120 mm. wide across the base, movable finger 0.165 mm. long in the holotype. Flagellum of four blades, the proximally placed two about equal in length and shorter than the more blade-like

distal two; the distalmost seta with a few acute, spine-like denticles along the terminal half of the margin. Fixed finger gently curved; a well-developed lamina exterior present; distal one-third of inner margin of finger with three retroconical teeth, inner margin of apical tooth with three small denticles; serrula interior with terminal four plates free and serrate. Movable finger nearly straight; apical tooth and subapical lobe well developed, a small conical denticle on the inner finger margin proximal to the subapical lobe and at about the level of the insertion of the galeal seta; serrula exterior of 17 plates; galea fairly stout and with four simple, acute, and very short rami along the distal one-third; galeal seta extending well beyond the tip of the galea.

Palpi moderately slender; conspicuously and regularly granulate except on the chelal fingers; setae short and somewhat inconspicuous, terminally and subterminally paucidenticulate, the setae of the proximal podomeres a little heavier than the setae of the more distal podomeres but never approaching a subclavate nature; setae of chelal fingers acuminate. Trochanter with pedicel about as wide as long; dorsal-lateral protuberance well developed; flexor margin evenly convex; length 0.47 mm. and width 0.255 mm. in holotype. Femur with pedicel about as wide as long; flexor margin nearly straight except near the ends, extensor margin gently convex except more convex in the distal fifth; femur 0.92 (0.91–1.00) mm. long, 0.225 (0.21–0.235) mm. wide, length 4.1 (4.1–4.45) times the width. Tibia with pedicel definitely longer than wide; flexor margin somewhat evenly convex except a little less convex near the distal end; extensor margin flatly convex (sometimes gently concave) in the center and a little more convex near the ends, especially near the distal end; length 0.88 (0.88–0.96) mm., width 0.225 (0.22–0.24) mm., length 3.9 (3.8–4.15) times the width. Chela in dorsal view with hand relatively much more stout than other podomeres of palp, fingers slender and well curved; pedicel nearly square in outline and located a little closer to the flexor than to the extensor margin; extensor and flexor margins joining basal margin without definite angulation, although hand is a little swollen on the basal-extensor corner; extensor margin weakly convex; flexor margin centrally flattened but more convex near the ends; the hand narrowing abruptly near the finger base but otherwise subrectangular in general outline; length of chela without pedicel 1.16 (1.13–1.20) mm., width 0.34 (0.32–0.365) mm., length 3.43 (3.28–3.6) times the width. From the side, chela with the hand subcylindrical in outline, pedicel near the center of the base; basal margin joins both flexor and extensor margins in a rounded contour; ventral margin very weakly convex, dorsal margin weakly convex with a slight interruption near the base of the fixed

finger; flexor and extensor margins subparallel; hand without pedicel 0.52 (0.50–0.56) mm. long, depth 0.29 (0.28–0.32) mm., length of movable chelal finger 0.69 (0.66–0.72) mm. Fixed finger nearly straight; movable finger weakly curved; about 45 or 50 conical and cusp-bearing teeth along the margin of each finger; nodus ramosus of fixed finger usually a little nearer the level of tactile seta *it* than the level of *est*; nodus ramosus of movable finger proximal to the level of tactile seta *t* by about the depth of the finger at the level of the seta; tactile setae of chelal fingers as shown in figures 11 and 12.

Legs typically cheliferoid; light golden yellow color; setae varying from flattened and paucidenticulate, but hardly subclavate, on the extensor surfaces of the proximal podomeres to acuminate on the flexor surface of the tarsus; legs with scale-like sculpturing which is stronger on the proximal than on the distal podomeres; subterminal setae acuminate; claws of first leg of male simple as are those of the other legs. First leg with trochanter 0.164 mm. long, 0.13 mm. deep; over-all length of pars basalis 0.253 mm., depth 0.148 mm.; pars tibialis subfusiform, flexor and extensor margins evenly convex, over-all length 0.36 mm., depth 0.114 mm.; tibia weakly S-shaped, length 0.39 mm., depth 0.085 mm.; tarsus subcylindrical, 0.37 mm. long, 0.063 mm. deep. Fourth leg with subcylindrical trochanter, 0.28 mm. long, 0.160 mm. deep; pars basalis subtriangular, flexor margin nearly straight, length along the flexor margin 0.272 mm., depth 0.188 mm.; pars tibialis with nearly even convex extensor margin, flexor margin nearly straight, length 0.62 mm., depth 0.250 mm.; entire femur 0.76 mm. long; tibia with regularly convex flexor margin, extensor margin nearly straight except weakly convex in the proximal third, length of tibia 0.61 mm., depth 0.136 mm.; tarsus gradually narrowing somewhat distally, length 0.401 mm., depth 0.089 mm.; tactile seta located in the distal half of the extensor margin of the tarsus and 0.272 mm. from the proximal-extensor corner of the podomere.

Genital complex as described for the tribe; posterior operculum with a nearly uniseriate marginal row of about 10 setae and with about four other setae flanking the aperture; anterior operculum with about 40 setae, chiefly in a close median cluster; conspicuous but short sclerotic rod in the invagination of the statumen convolutum.

FEMALE: Description based on the allotype and 11 paratypes. The measurements of the allotype are frequently followed in parentheses by the range of measurements for all 12 females. The female is very similar to the male; body length 3.8 (3.7–4.1) mm.; carapace 1.01 (0.98–1.05) mm. long, posterior width 0.66 (0.60–0.71) mm., greatest width 0.69

(0.62–0.75) mm., ocular width 0.52 (0.45–0.54) mm.; abdomen 2.8 mm. long and about 1.4 mm. wide in the allotype. Chelicera as in the male except that the galeal, laminal, and interior setae appear to be relatively a little shorter and the galea is longer, more slender, and bears about six simple and acute rami along the distal fourth, the rami being much longer than in the galea of the male; chelicera of allotype about 0.23 mm. long, base about 0.13 mm. wide, movable finger 0.175 mm. long. Palpus from the dorsad essentially as in the male except that the tibia is distinctly stouter, the chela is larger, the extensor and flexor margins of the chelal hand are more convex, and the hand is less rectangular in outline and in most specimens is more regularly narrowed towards the finger base; trochanter of allotype 0.49 mm. long, 0.27 mm. wide; femur 0.96 (0.90–1.01) mm. long, 0.22 (0.21–0.24) mm. wide, length 4.35 (4.15–4.55) times the width; tibia 0.85 (0.80–0.89) mm. long, 0.245 (0.235–0.27) mm. wide, length 3.46 (3.25–3.55) times the width; chela without pedicel 1.31 (1.22–1.37) mm. long, 0.40 (0.365–0.44) mm. wide, length 3.28 (3.1–3.5) times the width. From the side, the chelal hand differs little from that of the male, although both the dorsal and ventral margins are a little more convex, which results in an apparently less cylindrical outline of the hand; hand gradually narrowed from the midpoint of the hand to the base of the fingers; chelal hand without pedicel 0.64 (0.57–0.64) mm. long, depth of hand 0.34 (0.31–0.35) mm.; movable chelal finger 0.71 (0.67–0.77) mm. long; general shape of fingers, dentation, chaetotaxy, and position of nodi ramosi as in the male.

Legs essentially as in the male. First leg with pars basalis 0.29 mm. in over-all length, 0.16 mm. deep; pars tibialis with over-all length of 0.39 mm., depth 0.152 mm.; tibia 0.43 mm. long, 0.098 mm. deep; tarsus 0.37 mm. long, 0.067 mm. deep. Fourth leg with trochanter 0.31 mm. long, 0.178 mm. deep; pars basalis measured along the flexor margin 0.303 mm. long, 0.202 mm. deep; pars tibialis measured along the extensor margin 0.63 mm. long, 0.27 mm. deep; entire femur 0.81 mm. long; tibia 0.66 mm. long, 0.141 mm. deep; tarsus 0.405 mm. long, 0.09 mm. deep; tactile seta of tarsus located 0.253 mm. from the proximal margin of the tarsus.

Genital complex with the posterior operculum little modified, usually 10 to 12 setae in a uniseriate row on the face of the operculum; anterior operculum with six to nine setae in a submedial group on each side of the median line; median cribriform plate ribbon-like, transversely placed, with the ends curved and directed anteriorly; lateral cribriform plates small, irregular in shape, and not very conspicuous; sperm receptacles

appear paired, each in the form of a tubule without terminal enlargement and with the attached end of each tubule appearing to originate from one end of the median cribriform plate.

NYMPHS: Although numerous nymphs are contained in the collections, they have not been studied in detail.

REMARKS: This species appears confined to the nests of wood rats (*Neotoma*).

RECORDS: *Catron County:* A male and a female from a wood-rat nest, details not known. *Santa Fe County:* The male holotype, the female allotype, 12 male paratypes, 11 female paratypes, six males, 10 females, and about 50 nymphs taken from 18 nests of *Neotoma albigula* Hartley, in the vicinity of Santa Fe, at elevations between 6300 and 7000 feet.

TRIBE DACTYLOCHELIFERINI BEIER

This tribe consists of cheliferin pseudoscorpions with the following combination of characteristics: statumen convolutum never more than slightly invaginated and never having a median, rod-like process; coxal sacs of male, when present, usually with a sharply differentiated atrium; median cribriform plates of female fused into a single structure that is ordinarily ovoid and plate-like in general outline. In the United States, this tribe is represented by two genera, of which one, *Dactylochelifer,* occurs in New Mexico.

DACTYLOCHELIFER BEIER

Dactylochelifer BEIER, 1932, Das Tierreich, vol. 58, p. 253

Species belonging to this genus can be recognized by the following series of characteristics: setae never more than moderately clavate; fixed chelal finger with tactile seta *it* about midway between *et* and *ist* or nearer to *et* than to *ist;* movable finger with tactile seta *st* about midway between *sb* and *t* or closer to *sb* than to *t;* fourth pedal tarsus without a tactile seta; tarsal claws not toothed, subterminal setae acuminate and simple; first pedal tarsus of male modified, apical spine wanting, claws asymmetrical in appearance; coxal sacs with typical atria; statumen convolutum never anteriorly invaginated. About a dozen species are reported from the Palearctic region, and a single Nearctic species, *D. copiosus* Hoff, 1945, has been reported from Arkansas and Illinois (Hoff, 1949). Our New Mexico species, *D. silvestris,* new species, is new to the literature.

Dactylochelifer silvestris, new species

Figures 16–17

MALE: The description is based on a single male, the holotype. Typically cheliferoid in appearance; body fairly stout, appendages moderately slender; color in general a golden yellow, palpi and abdomen somewhat deeper and legs somewhat lighter in color than carapace; setae of carapace and tergites moderately clavate, setae of appendages varying from subclavate to acuminate; 2.4 mm. in length. Carapace subtriangular in outline; transverse furrows not strongly impressed; posterior margin gently but weakly convex, lateral margins nearly straight in the posterior and middle portions but becoming anteriorly convex to join the well-rounded anterior margin; two well-developed eyes; about 14 setae in an irregular row along the posterior carapacal margin; setae on dorsal and lateral surfaces of carapace fairly numerous and well scattered, all setae weakly to moderately clavate; entire surface of carapace coarsely granulate; carapace widest across the posterior margin; length of carapace 0.84 mm., posterior width 0.83 mm., ocular width 0.43 mm. Abdomen ovate in outline; all tergites divided; surface of tergites coarsely granulate, with granules reduced to form nearly smooth patches about the bases of setae on the face of each tergal half; each tergal half with six or seven marginal setae and with three setae anterior to the row, of these three setae one is along the lateral border, one along the medial border, and one occurs on the face of the central part of each tergal half; all setae of tergites moderately clavate except on the eleventh tergite where, except for a pair of acuminate pseudotactile setae, the setae are paucidenticulate. Sternites divided; surface of sternites a little less strongly granulate than the surface of tergites; setae acuminate except for some paucidenticulate setae on the posterior two sternites; eleventh sternite with a pair of acuminate pseudotactile setae; four marginal setae on each half of the fourth sternite, each sternal half of center of abdomen with six to seven acuminate setae in a uniseriate row. Pleural membranes irregularly striated; anterior stigmatic plates asetaceous, each posterior plate with one seta; abdomen about 1.2 mm. in width.

Chelicera fairly stout, with respect to both the base and the fingers; fingers gently curved; setae *b* and *sb* of the cheliceral base apparently acuminate; surface of hand marked by a few scale-like lines; flagellum of three setae, the shortest about one-half of the length of the longest; the longest seta of the flagellum with a few acute denticles along the distal one-half of the anterior margin; chelicera about 0.23 mm. long, base

about 0.125 mm. wide, movable finger 0.17 mm. in length. Fixed finger of chelicera with a well-developed lamina exterior; three retroconical teeth near the distal end of the inner finger margin and two denticles on the inner margin of the apical tooth; probably the four distal plates of the serrula interior are free and serrate. Movable cheliceral finger with well-developed subapical lobe and with one or two minute teeth on the inner finger margin at the level of the insertion of the galeal seta; galeal seta extending beyond the tip of the galea; galea somewhat slender, with three or four short and acute rami in less than the distal one-half; plates of serrula exterior cannot be counted accurately in specimen but are apparently 17 or 18 in number.

Palps of the usual cheliferoid appearance; surfaces of all podomeres coarsely and somewhat uniformly granulate; setae varying from weakly subclavate to paucidenticulate on most podomeres to acuminate on the chelal fingers. Trochanter with strongly developed subdorsal protuberance; extensor margin strongly convex except near the ends; pedicel about as long as wide; trochanter 0.44 mm. long, 0.24 mm. wide. Femur with pedicel nearly square in outline; extensor margin flatly convex except more convex near the ends; flexor margin very weakly convex to straight except for a weak sinuation or concavity in the distal one-fifth; setae short, flattened, and paucidenticulate; some setae of the flexor surface weakly subclavate; length of femur 0.77 mm., width 0.21 mm. Tibia with pedicel very little wider than long; extensor margin flatly convex but a little more convex in the distal one-third; flexor margin gently and regularly convex except at the very distal end; setae of flexor surface short, blade-like, and paucidenticulate; setae of extensor surface longer, more slender, and weakly paucidenticulate; 0.76 mm. long, 0.24 mm. wide. Chela from the dorsad with the stout pedicel displaced but little towards the flexor side of the hand; basal margin rounded; both extensor and flexor margins weakly and gently convex; fingers slender and gently curved; setae paucidenticulate, those of the flexor surface shorter and stouter than those of the extensor surface; length 1.24 mm., width 0.33 mm. From the side, chelal hand appears subcylindrical in outline; basal margin well rounded and with the pedicel near the center; both ventral and dorsal margins of hand very weakly convex; hand tapering but little towards the base of the fingers; fixed finger straight, movable finger gently curved; fixed finger with nearly 45 marginal teeth, movable finger with nearly 50 marginal teeth; nodus ramosus of fixed finger located a little distal to the level of tactile seta *it*, nodus ramosus of the movable finger located a little distal to tactile seta *t*, neither nodus ramosus con-

spicuous; tactile setae as shown in figures 16 and 17; chelal hand 0.62 mm. long, 0.30 mm. deep; movable finger 0.69 mm. in length.

Legs as usual in species of the genus; surface of podomeres marked by scale-like markings, but these become very weak in the more distal podomeres; setae of extensor margins of podomeres subclavate on proximal podomeres to weakly paucidenticulate on the distal ones; setae of flexor surfaces strongly paucidenticulate on the more proximal podomeres but subacuminate and acuminate on the tarsi. First leg with pars basalis 0.28 mm. in over-all length, depth 0.165 mm.; pars tibialis 0.36 mm. in over-all length, 0.148 mm. in depth; tibia stout, extensor margin weakly S-shaped, flexor margin strongly convex and bulging except at the very proximal end; tibia 0.315 mm. long, 0.128 mm. deep; tarsus subfusiform, both extensor and flexor margins gently convex, length 0.36 mm., depth 0.124 mm.; tarsal claws long and slender, almost straight except gently bent in the distal one-fourth; posterior claw with a dentate ridge along the inner margin of the central part of the claw and with a well-developed and acute tooth near the distal end of the ridge; anterior tarsal claw edentate. Fourth leg with pars basalis 0.23 mm. long, 0.155 mm. deep; pars tibialis with flexor margin virtually straight and continuous with the flexor margin of the pars basalis, extensor margin moderately and evenly convex, 0.55 mm. long, 0.205 mm. deep; entire femur 0.68 mm. in length; tibia with extensor margin weakly concave except weakly convex in the basal one-fourth, flexor margin gently and evenly convex, length 0.53 mm., depth 0.120 mm.; tarsus subcylindrical, with both extensor and flexor margins a very little convex, length 0.44 mm., depth 0.087 mm.

Genitalia as described for the genus; anterior operculum with over 50 well-scattered setae; posterior operculum with five setae on the anterior margin flanking the genital aperture and with a few setae on the face of the operculum.

FEMALE: Description based on two individuals, the allotype and one paratype. Measurements given for the allotype are followed in parentheses by the corresponding measurements of the paratype. Female much like the male in general appearance, but all body parts slightly larger; body length 3.3 mm. (abdomen spread in mounting) in the holotype, 2.4 mm. (abdomen contracted) in the paratype. Carapace like that of the male, 0.93 (0.92) mm. long, greatest width 0.74 (0.93, spread in mounting) mm., ocular width 0.42 (0.43) mm. Abdomen like that of the male in general shape, chaetotaxy, and sculpturing (paratype with the right half of ninth tergite fused obliquely with the left half of the eighth); chelicera as in the male except that the galea is longer and bears six (perhaps occa-

sionally five) subterminal and terminal rami; galeal seta not reaching nearly to the level of the tip of the galea; usually 18 plates in the serrula exterior; length of chelicera 0.255 (0.24) mm., width of base 0.14 (0.14) mm., length of movable finger 0.192 (0.20) mm. Palpus much like that of the male holotype except that the sinuation near the distal end of the flexor margin of the femur is obsolete and the podomeres are a little larger in actual size; trochanter 0.45 (0.46) mm. long and 0.255 (0.25) mm. wide; femur 0.79 (0.82) mm. long and 0.22 (0.235) mm. wide; tibia 0.78 (0.79) mm. long, 0.245 (0.26) mm. wide; chela 1.29 (1.29) mm. in length, 0.345 (0.36) mm. in width. From the side, chela much as in the male; about 50 marginal teeth on each of the chelal fingers; chelal hand 0.65 (0.64) mm. long, 0.31 (0.33) mm. deep; movable chelal finger 0.70 (0.70) mm. in length. Legs of the female like those of the male except that in the first leg the pars tibialis and the tibia are more slender than in the male and the unspecialized tarsus resembles closely the tarsus of the fourth leg. First leg of female with trochanter 0.175 (0.19) mm. long, 0.145 (0.15) mm. deep; over-all length of pars basalis 0.265 (0.28) mm., depth 0.16 (0.16) mm.; over-all length of the pars tibialis 0.38 (0.39) mm., depth 0.135 (0.135) mm.; tibia with the flexor margin strongly convex but not greatly bulging as in the male, 0.35 (0.36) mm. long, 0.104 (0.105) mm. deep; tarsus subcylindrical, with both margins very weakly convex, much more slender than in the male, length of tarsus 0.385 (0.40) mm., depth 0.077 (0.08) mm. Fourth leg with trochanter 0.34 mm. long, 0.16 mm. deep in allotype; pars basalis 0.25 (0.26) mm. long, 0.155 (0.16) mm. deep; pars tibialis 0.57 (0.58) mm. long, 0.195 (0.21) mm. deep; entire femur 0.72 (0.74) mm. long; tibia 0.555 (0.56) mm. in length, 0.125 (0.125) mm. in depth; tarsus 0.45 (0.45) mm. long, 0.088 (0.095) mm. deep. Genitalia little sclerotic and position of aperture difficult to ascertain with accuracy; the anterior operculum bears about 20 setae on the face of the operculum; posterior operculum with a posterior marginal row of seven or eight setae; median cribriform plate with a diameter of about twice that of each of the lateral plates.

REMARKS: Our new species is readily differentiated from other species of the genus by the length and length/width ratios of palpal podomeres and by the shape of the tarsus of the first leg of the male. From *D. copiosus,* Hoff, 1945, the only other Nearctic species, our new form is distinguished by having a stouter palpal femur and chela and by having a more oval chelal hand as seen in dorsal view, the chelal hand not narrowing so regularly and so strongly towards the finger base as in *D. copiosus.*

RECORDS: *Bernalillo County:* The male holotype taken from juniper litter near Escabosa in the extreme southeast corner of the county, elevation between 7000 and 7500 feet. *Sandoval County:* The female allotype and two nymphs from Rio Grande cottonwood litter, just northwest of Pena Blanca, along the Rio Grande, elevation about 5300 feet. *Valencia County:* One female paratype, taken with beetles in a light trap in an area of mixed pinyons, junipers, yellow pines, and Gambel oak, at 7500 feet elevation, southwest base of Mt. Taylor, northeast of Grants.

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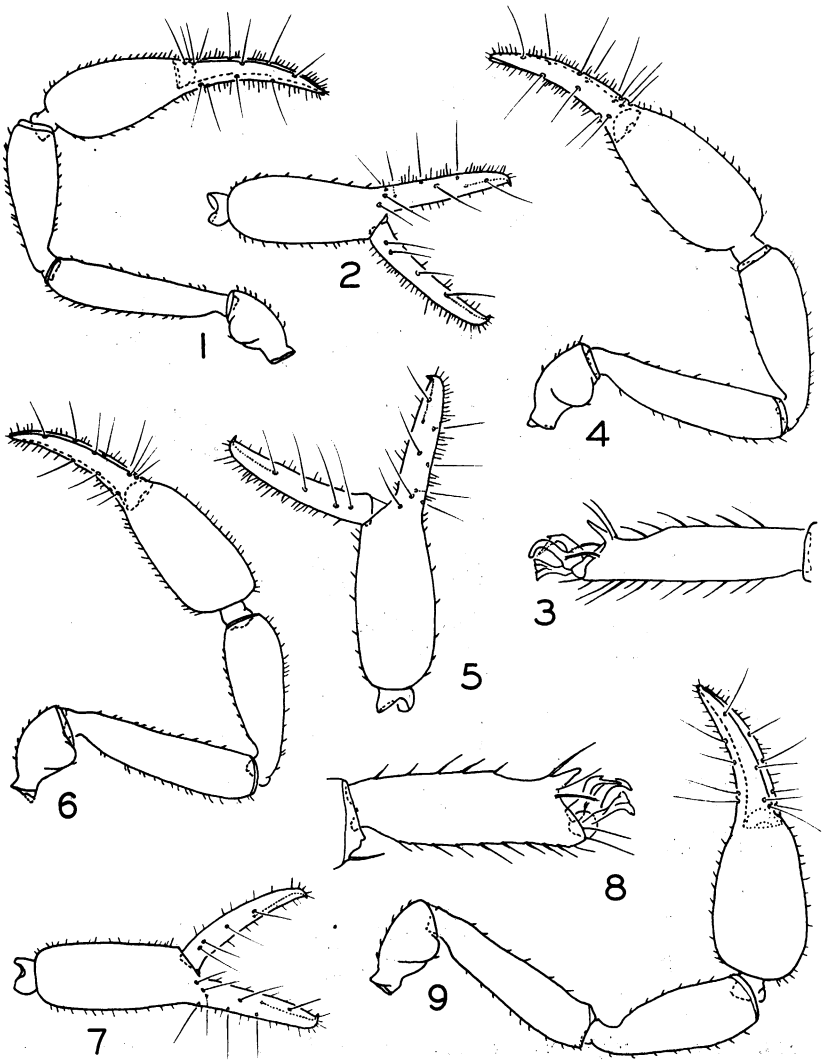

FIGS. 1–5. *Hysterochelifer urbanus*, new species. 1. Dorsal view of palp, male holotype. 2. Lateral view of chela, male holotype. 3. Tarsus of first leg, male holotype. 4. Dorsal view of palp, female allotype. 5. Lateral view of chela, female allotype.

FIGS. 6–9. *Phorochelifer mundus*, new genus and new species. 6. Dorsal view of palp, male holotype. 7. Lateral view of chela, male holotype. 8. Tarsus of first leg, male holotype. 9. Dorsal view of palp, female allotype.

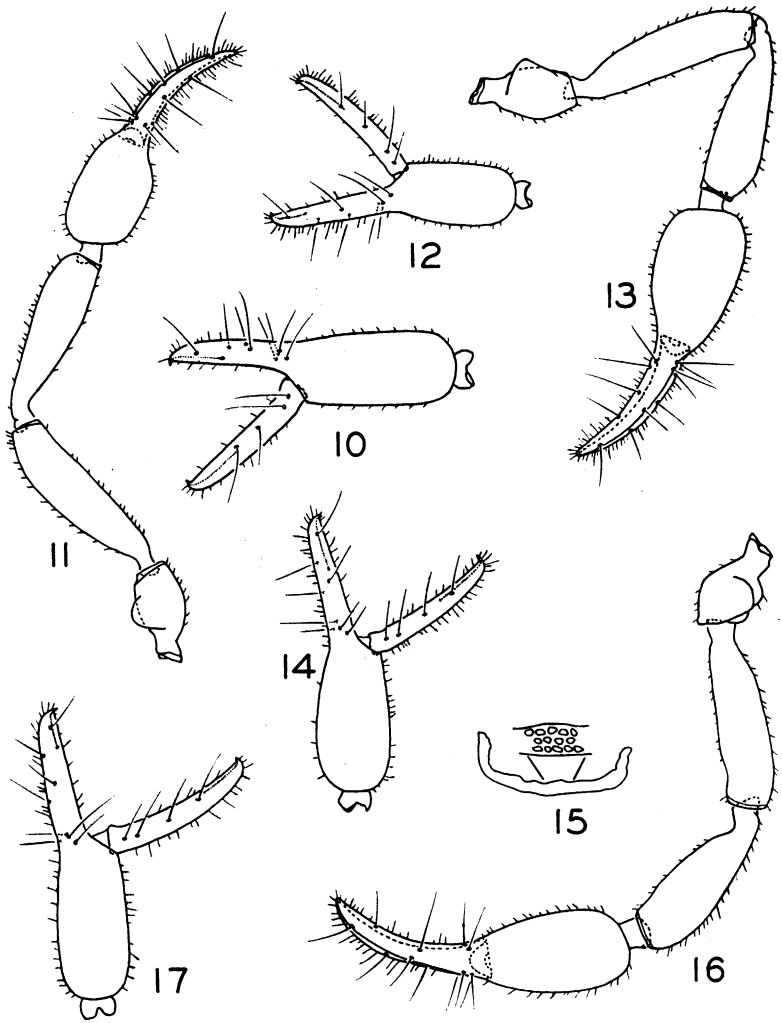

FIG. 10. *Phorochelifer mundus*, new genus and new species. Lateral view of chela, female allotype.

FIGS. 11–15. *Juxtachelifer fructuosus*, new genus and new species. 11. Dorsal view of palp, male holotype. 12. Lateral view of chela, male holotype. 13. Dorsal view of palp, female allotype. 14. Lateral view of chela, female allotype. 15. Outline of median cribriform plate with detail of small section, female allotype.

FIGS. 16–17. *Dactylochelifer silvestris*, new species, male holotype. 16. Dorsal view of palp. 17. Lateral view of chela.